

**Notice of Allowability**

Application No.

10/657,945

Examiner

Phylesha L. Dabney

Applicant(s)

KING, JAMES T.

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 5/2/06.
2. ☒ The allowed claim(s) is/are 2-8, 10, 11, 13-16 and 21.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).


\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date 5/3/06.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

  
**SUHAN NI**  
PRIMARY EXAMINER

### **DETAILED ACTION**

This action is in response to the Amendment filed on 6 April 2006 and Interview conducted on 2 May 2006 in which claims 2-8, 10-11, 13-16, and 21 are pending.

#### ***Examiner's Amendment***

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Attorney G. O'Bradovich on 2 May 2006.

The application has been amended as follows:

- See the attached pages 5-7.

#### ***Reasons For Allowance***

The following is an examiner's statement of reasons for allowance:

With respect to independent claims 5, 16, and 21, the nonobvious improvement comprises a boundary button connected to the forward face and oriented over and generally parallel to the microphone, thereby creating a pressure zone between the boundary button and the microphone.

And for these reasons in conjunction with the other functional language recited in the claims, the instant application is found to be direct to a nonobvious improvement over the invention patented in Patent Number: 5,410,608.

Art Unit: 2615

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phylesha L. Dabney whose telephone number is 571-272-7494. The examiner can normally be reached on Mondays, Tuesdays, Wednesdays, Fridays 8:30-4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
P O Box 1450  
Alexandria, VA 22313-1450

**Or faxed to:**

(703) 273-8300, for formal communications intended for entry and for informal or draft communications, please label "Proposed" or "Draft" when submitting an informal amendment.

**Hand-delivered responses should be brought to:**

Customer Service Window  
Randolph Building  
401 Dulany Street  
Alexandria, VA 22314

Art Unit: 2615

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

May 2, 2006

  
PLD

Art Unit: 2615

IN THE CLAIMS

1(canceled).

2(previously presented). The hearing aid as claimed in Claim 5 further comprising legs connected between a lower surface of the boundary button and the upper surface of the forward face.

3(original). The hearing aid as claimed in Claim 2 further comprising a space formed between the forward face and the boundary button, the width of the space generally being defined by the length of the legs.

4 (original). The hearing aid as claimed in Claim 3 wherein the space is a pressure zone.

5(currently amended). A hearing aid, comprising:

a main hearing aid body having a forward end and a rear end;

a forward face having an upper surface;

a speaker oriented in the rear end;

a microphone element oriented flush with the forward face, thereby placing the microphone in a boundary mode; and

a boundary button connected to the forward face and oriented over and generally parallel to the microphone, thereby creating a pressure zone between the boundary button and the microphone,

wherein the microphone element has a diameter and the boundary button has a diameter, and

wherein [the] an area of the forward face and [the] an area of the boundary button have an effective combined area that enhances the hemispherical three dimensional pick-up pattern of the microphone.

6(original). The hearing aid as claimed in Claim 5 wherein the diameter of the boundary button is larger than the diameter of the microphone element.

7(original). The hearing aid as claimed in Claim 6 wherein the diameter of the boundary button is twice the diameter of the microphone element.

8(previously presented). The hearing aid as claimed in Claim 5 wherein the forward end of the microphone element is oriented flush with the upper surface of the forward face.

Art Unit: 2615

9(canceled).

10(previously presented). The microphone as claimed in Claim 16 further comprising legs connected between the first surface and the second boundary.

11(original). The microphone as claimed in Claim 10 wherein the legs space the first and second boundaries to create a high frequency cut-off of the microphone.

12(canceled).

13(previously presented). The microphone as claimed in Claim 16 wherein the second boundary has a diameter greater than the diameter of the membrane.

14(previously presented). The microphone as claimed in Claim 16 wherein the diameter of the first boundary creates a low frequency cut-off.

15(previously presented). The microphone as claimed in Claim 16 wherein the diameter of the second boundary creates a low frequency cut-off.

16(currently amended). A hearing aid microphone, comprising:

a first hearing aid microphone boundary having a first surface:

a microphone pressure membrane oriented in the boundary generally flush with the first surface; and

a second hearing aid microphone boundary generally parallel to the first boundary the second boundary being oriented directly in front of the membrane and parallel to the membrane.

wherein the first boundary has a diameter greater than [the] a diameter of the second boundary.

wherein [the] an area of the first boundary and [the] an area of the second boundary have an effective combined area that enhances the hemispherical three dimensional pick-up pattern of the microphone.

17-20(canceled).

21(currently amended). A hearing aid kit, comprising:

a hearing aid having a forward face and a microphone oriented in the forward face; and

a boundary button adapted to be connected to the forward face,

Art Unit: 2615


wherein the forward face is a first boundary, the microphone being positioned in the first boundary flush to the first boundary, thereby placing the microphone in a boundary mode,

wherein the boundary button is a second boundary, the second boundary being adapted to create a pressure zone between the microphone and the second boundary when the boundary button is mounted on the forward face,

wherein the distance between the microphone and the boundary button determines the high frequency cut off of the microphone,

wherein the relationship of the diameters of the boundary button and the microphone determine the low frequency cutoff of the microphone and

wherein [the] an area of the first boundary and [the] an area of the second boundary have an effective combined area that enhances the hemispherical three dimensional pick-up pattern of the microphone.



SUHAN NI  
PRIMARY EXAMINER